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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,388	01/24/2002	Yoshihiro Katsu	JP920010010US1	3893

32074 7590 04/29/2003

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EXAMINER
DI GRAZIO, JEANNE A

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	10/056,388	KATSU ET AL.	
	Examiner	Art Unit	
	Jeanne A. Di Grazio	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

Priority to Japanese Patent Application No. 2001-024758 (Jan. 31, 2001) is claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 2001/0036068 A1) in view of Zhao et al. (US '816 B1).

Per claims 1, 9, 10, 12, and 13: Suzuki has an LCD with a backside, a light guide plate including an incident surface and an emitting surface, where the light guide plate is provided along the backside of the LCD panel and where the emitting surface of the light guide plate faces toward the backside of the LCD panel (Figure 2 and [0064]). Suzuki has a lamp along an incident surface of the light guide plate (referring to Figure 2). Suzuki also has a lamp reflector and accommodating inner circumference surface for the lamp [0062]. Suzuki does not appear to have a light reflection layer formed on an inner surface of the lamp reflector and a transparent protective layer formed on the reflection layer wherein the transparent protective layer has a thickness less than about 5 micrometers; however, Zhao has a buffer layer of between 0.003 and 0.01 micrometers etc. (Col. 6, Lines 1-7)(the buffer layer may be optional) and protective layer preferably of a thickness of between about 0.05 to 0.4 micrometers and more preferably around 0.05-0.14 micrometers (Col. 6, Lines 25-30). It would have been obvious to one of ordinary skill

in the art at the time the invention was made to modify Suzuki in view of Zhao to protect a silver coating on the light reflection layer from oxidation during the formation of the lamp and against subsequent degradation by atmospheric sulfides as taught by Zhao (Col. 6, Lines 28-30).

Per claim 2: Suzuki has a lamp reflector further including arm portions along the emitting surface and back surface at the incident surface side of the light guide plate (Figure 2). Suzuki appears to have light transmission regions (reflection sheet, Item No. 4 in Figure 2) defined by a space between the arm portions and emitting surface and back surface. Suzuki does not appear to have these regions of a determined thickness with a thickness less than about 5 micrometers; however, Zhao has a light transmission layer (reflector surface) with a thickness of about 0.1 to 0.6 micrometers in thickness and more preferably from 0.2 to 0.4 micrometers in thickness (Col. 5, Lines 9-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki in view of Zhao to prevent bright lines as taught by Suzuki.

Per claims 3 –4, 8 and 14: Suzuki does not appear to have a transparent protective layer of 3.5 micrometers or less and light transmission region of 3.5 micrometers or less; however, Zhao has as noted (Col. 6, Lines 25-30 and Col. 5, Lines 9-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki in view of Zhao to protect a silver coating on the light reflection layer from oxidation during the formation of the lamp and against subsequent degradation by atmospheric sulfides as taught by Zhao (Col. 6, Lines 28-30) and to prevent bright lines as noted in Suzuki.

Per claims 5 and 15-16: Suzuki has a sheet-shaped support body having a specified rigidity [0062]. It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have a sheet-shaped support body of a specified rigidity to prevent shock and damage to the lamp reflector.

Per claims 6 and 11: Suzuki does not appear to have a transparent protective layer formed on the light reflection layer after the light reflection layer is formed on the inner circumference surface; however, Zhao has this arrangement (Col. 5, Lines 9-18, Lines 35-41 and Col. 6, Lines 8-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki in view of Zhao to form an optical coating that permits reflectance and that also protects the reflection layer from oxidation as noted in Zhao (Col. 6, Lines 24-30).

Per claim 7: Suzuki, as noted with respect to claims 1 and 2, has arm portions having an arm surface sandwiching the emitting and back surfaces of the light guide plate and defining light transmission regions (reflection sheet, Figure 2, Ref. Item 4). Suzuki does not appear to have light transmission regions of a thickness less than about 5 micrometers; however, Zhao has a buffer layer of between 0.003 and 0.01 micrometers etc. (Col. 6, Lines 1-7)(the buffer layer may be optional) and protective layer preferably of a thickness of between about 0.05 to 0.4 micrometers and more preferably around 0.05-0.14 micrometers (Col. 6, Lines 25-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki in view of Zhao to protect a silver coating on the light reflection layer from oxidation during the formation of the lamp and against subsequent degradation by atmospheric sulfides as taught by Zhao (Col. 6, Lines 28-30).

Per claim 17: Suzuki has a light guide plate of an acrylic resin [0023]. It would have been obvious to one of ordinary skill in the art to have a transparent protective layer of an acrylic resin for high light transmissivity as taught by Suzuki at [0023].

Per claim 18: Suzuki does not appear to have SiO2 or TiO2; however; Zhao has a buffer layer and protective layer of SiO2 and TiO2 (Col. 5, Lines 43-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki in view of Zhao to prevent oxidation of the reflective layer as noted.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 2001/0036068 A1) and Zhao et al. (US '816 B1) as applied to claims 1-18 above and in view of Kitagawa (US '418 B1).

Per claim 19: Suzuki does not appear to have a resin selected from acryl, PET, or polycarbonate. However, Kitagawa has films of PET and polycarbonate (Col. 5, Lines 29-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki in view of Kitagawa for insulation and for the ability to withstand heat generated from a lamp.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 2001/0036068 A1) and Zhao et al. (US '816 B1) as applied to claims 1-19 above and in view of Simpson (US '228 B1) and further in view of Yukio et al. (JP 2001-166295).

Per claim 20: Suzuki does not appear to have a reflection layer of Ag, Al, Pt, or a white colored material; however, Simpson has a reflector of Ag, Al, and Pt (Col. 9, Lines 6-10 and [ABS]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki in view of Simpson for good reflectivity (Id.). Suzuki does not appear to have a white material; however, Yukio has a white reflection film (PAJ). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki in view of Yukio to prevent a decrease in luminance (PAJ).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

JDG
April 23, 2003

Robert Kim, SPE

TOAN TON for RPE
PRIMARY EXAMINER